CORRES. CONTROL
OUTGOING LTR. NO.

DOE ORDER #5400.5 NONE

98-RF- 00974

DIST.	LTR	NC
BENSUSSEN, S. J.		
BRAILSFORD, M. D.		
BURDGE, L.		
CARD, R. G.		
FERRERA, D. W.		
HARDING, W. A.	X	
HILL, J. A.		
KELL, R. E.		
MARTINEZ, L. A.		
PARKER, A. M.		
SPEARS, M. S.		
TILLER, R. E.		
TUOR, N. R.		
VOORHEIS, G. M.		
BACON, R. F.	X	
BARROSO, J. B.	X	
HARWARD, D. J.	X	
HUGHES, F. P.	X	
NEWLAND, D. J.	X	
OVERLID, T. W.	X	
PATTERSON, J. B.	X	
ROBERTS, R. S.	X	
VAUGHN, T. L.	X	
CORRES.CONTROL	X	
ADMIN RECRD/080		
TRAFFIC		
PATS/T130G		

CLASSIFICATION:

UNI		
UNCLASSIFIED	X	
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE:

Date: 3/10/98

IN REPLY TO RFP CC NO.: N/A

ACTION ITEM STATUS:
PARTIAL/OPEN
CLOSED

LTR APPROVALS:

ORIG. & TYPIST INITIALS: RSR:cjb

RF-46469 (Rev. 2/28/97)

KAISER•HILL COMPANY

RECEIVED
MAR 13 1998

March 10, 1998

98-RF-00974

David C. Lowe
Assistant Manager for Engineering
DOE, RFFO

APPLICATION OF SURFACE CONTAMINATION GUIDELINES FROM DEPARTMENT OF ENERGY ORDER 5400.5 - WAH-064-98

Kaiser-Hill requests that DOE, RFFO approve Kaiser-Hill's interpretation of Department of Energy (DOE) Order 5400.5, Figure IV-1, "Surface Contamination Guidelines." This interpretation concerns how a surface can be evaluated with respect to the "Allowable Total Residual Surface Contamination" (ATRSC) in Figure IV-1.

Historically , compliance with the ATRSC limits has been met at the Rocky Flats Environmenta Technology Site (RFETS) by surveying items or areas with direct reading radiation detection equipment. This radiation detection equipment can only detect radioactive material located directly on a surface. Therefore, it currently needs to be assured that all radioactive material is present on the surface of the item, or area being surveyed to show compliance with the ATRSC limits. In some instances radioactive material may have penetrated into the surface of a material to a limited degree (e.g., a spill of radioactive material in liquid form on a concrete floor), or radioactive material may be present in a material on a surface (e.g., radioactive material present in a coating of paint). In these cases, the current methods for assuring compliance with the ATRSC limits in DOE Order 5400.5 are not sufficient. Alternative methods need to be developed to assure compliance.

Kaiser-Hill believes that the ATRSC limits may be applied to materials that contain radioactive material if this radioactive material is evaluated with a conservative approach that is appropriate to the situation. The following outlines this approach:

1. For a given surface type (i.e., concrete surface, paint sample, etc.), a sample will be taken of the surface to the depth of the radioactive material present (i.e., to a known depth of the concrete, to the depth of the paint, etc.)
2. The sample will be taken from a defined area of the surface (i.e., from a 10 cm X 10 cm area, from a 10 inch X 10 inch area, etc.)
3. The sample will be analyzed for radioactive material indicative of RFETS (i.e., plutonium, americium, uranium, etc.)

ADMIN RECORD

Kaiser-Hill Company, L.L.C.
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4. The amount of radioactive material in the sample is then uniformly distributed over the sample area so that the amount of radioactive material present in the sample is in the units of dpm/100cm^2
5. This quantity is then compared with the ATRSC limits.

This approach is conservative and appropriate in that all the radioactive material contained in the surface is concentrated at the top of the surface and then compared with the ATRSC limits. Therefore, the "Total" amount of radioactive material present is being compared with the ATRSC limits. Also, this is conservative and appropriate since it is much harder for the radioactive material contained in a surface to come into contact with an individual than if the radioactive material is present on the surface. This approach is also consistent with the approach in Section 7.5.2.2, "Sample Content," of the Final MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual).

Kaiser-Hill believes that the above approach should be used when evaluating radioactive material that is contained in a surface. Kaiser-Hill requests that DOE, RFFO approve Kaiser-Hill's approach to complying with DOE Order 5400.5, Figure IV-1 by March 30, 1998 to support the Building 123 & 779 Deactivation and Decommissioning projects.

If you have any questions or comments, please contact Rick Roberts at Extension 4869 or Jeff Barroso at Extension 8451.

Wynn A. Harding
Vice-President
Safety Systems & Engineering
Kaiser-Hill Company, L.L.C.

RSR:cjb

Orig. and 1 cc - David C. Lowe